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PATENT



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of: Charles Q. Zhan, et al.  
U.S. Serial No.: 10/717,086  
Filed: November 19, 2003  
For: APPARATUS AND METHOD FOR IDENTIFYING  
DEFECTIVE VALVES  
Group No.: 2863  
Examiner: Xiuqin Sun

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**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

The Applicant respectfully requests review of the final rejection in the above-identified patent application. No amendments are being filed with this request. This request is being filed with a Notice of Appeal. The review is requested for the reason(s) stated in the arguments below, demonstrating the clear legal and factual deficiency of the rejections of some or all claims.

Claims 1-25 were rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Specifically, the Examiner asserts that the claims “do not produce any tangible result” and that the “practical application of the claimed invention cannot be realized until the determined probability is conveyed to the user.” The Examiner also asserts that for the “result to be tangible, it

would need to [be] output to a user or displayed to a user or stored for later use.” (*11/16/06 Office Action, Pages 2-3, Section 4*). For the convenience of the panel, Claim 1 is reproduced below:

1. (Previously Presented) A method, comprising:
  - identifying one or more operating characteristics associated with a valve;
  - identifying one or more indicators of a possible defect in the valve at each of a plurality of resolution levels using at least one of the one or more operating characteristics;
  - generating a plurality of indexes associated with the resolution levels, the indexes based on the one or more indicators and each identifying a likelihood of a valve defect;
  - selecting one of the plurality of resolution levels using at least one of the indexes; and
  - determining an overall probability of a valve defect using at least one of the indexes that is associated with the selected resolution level.

Independent Claims 1, 9, 15, 22, and 24 each includes a limitation indicating that an “overall probability of a valve defect” is determined using at least one index.

The Official Gazette notice dated November 22, 2005 entitled “Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility” and MPEP § 2106 set out how a claimed invention must produce a useful, concrete, and tangible result. A claimed invention is “useful” when it satisfies the utility requirement of § 101. The Examiner makes no rejection of the claims as lacking utility under § 101. As a result, Claims 1-25 produce a “useful” result.

A claimed invention produces a “concrete” result when it can produce a result that is substantially repeatable or that substantially produces the same result again. The Examiner makes no assertion that the claimed invention produces a result that is unpredictable or unrepeatable or that the claimed invention fails to substantially produce the same result again. As a result, Claims 1-25 produce a “concrete” result.

A claimed invention produces a “tangible” result when a claim sets forth a “practical application” of a § 101 judicial exception to produce a “real-world result.” The “tangible” requirement does not require that a claim be tied to a particular machine or apparatus or that a claim operate to change articles or materials. Here, Claims 1-25 clearly set forth a practical application (the determination of an overall probability of a valve defect). Moreover, an overall probability of a valve defect, which is determined using operating characteristics associated with a valve, clearly represents a “real-world result.” As a result, Claims 1-25 produce a “tangible” result.

The Examiner makes the unusual statement that the claims “appear to be directed to an algorithm for determining an overall probability of a valve defect rather than a practical application of the algorithm in the real world.” (*1/17/07 Advisory Action, Page 2*). The Examiner apparently feels that the determination of an overall probability of a valve defect is not a “real world” application. This basically requires the Examiner to take the position that valves and probabilities of valve defects are mere abstract ideas. Moreover, the Applicant is not claiming “probability” in general. Rather, the Applicant is claiming particular methods, an apparatus, a computer program, and a system for determining an overall probability of a valve defect. This is clearly a “real world” application of the claimed invention. The Examiner’s position is therefore factually and legally insufficient.

Not only that, the Examiner fails to cite any authority indicating that a result must be output, displayed, or stored to be “tangible.” This requirement is not specified in the Official Gazette notice or MPEP § 2106. In fact, this requirement contradicts the express statement in the Official Gazette notice and MPEP § 2106 that the “tangible” requirement does not require a claim to be tied to a particular machine or apparatus. The Federal Circuit has also held that a process claim that applies a

mathematical algorithm to “produce a useful, concrete, tangible result without pre-empting other uses of the mathematical principle” on its face “comfortably falls within the scope of § 101.” (*AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352, 1358, 50 U.S.P.Q.2d 1447, 1452 (Fed. Cir. 1999)). In addition, the Examiner’s statement that a result must be output, displayed, or stored to be “tangible” is factually and legal incorrect. The Official Gazette notice dated November 22, 2005 and MPEP § 2106 provide the definition of “tangible,” namely that a claim set forth a “practical application” to produce a “real-world result.” There is no requirement in the Official Gazette notice, MPEP § 2106, or § 101 that a result must be output, displayed, or stored.

For these reasons, the Examiner’s rejection of Claims 1-25 under § 101 is factually and legally insufficient. The Examiner is imposing requirements on the Applicant that are not required or supported by § 101, the Official Gazette notice, or MPEP § 2106 (or any other law, rule, case, or MPEP section).

Claims 26 and 27 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Claim 26 recites the method of Claim 1, where the method further includes “at least one of: storing, transmitting, and displaying the overall probability of the valve defect.” The Examiner asserts that these recitations are not described or supported in the originally filed application. Claim 27 is presumably rejected due to its dependence from Claim 26.

First, to speed up prosecution of this application, the Applicant attempted to resolve this issue by cancelling Claim 26 and rewriting Claim 27 to depend from Claim 1. The Examiner refused to enter this amendment, asserting that it did not materially reduce the issues on appeal. However, these amendments resolved the § 112 rejection, so the Examiner improperly refused to enter this amendment.

Second, the Applicant's specification clearly describes how certain functions are performed by a controller 108 or defect detector 118. The Applicant's specification also clearly describes how each of these components includes hardware, software, firmware, or a combination thereof. For example, each of these components could include one or more software routines stored in at least one memory and executed by at least one processor. A person skilled in the art would easily understand that a processing system such as this would be inherently capable of storing, transmitting, and/or displaying an overall probability of a valve defect. For example, all data used, generated, or collected by a processor in a processing system is always stored in some way, whether it is stored in a cache, register, buffer, stack, RAM, hard drive, or other storage medium.

For these reasons, the Applicant asserts that the claims in this application are in condition for allowance and that the rejections are factually and legally deficient. Accordingly, the Applicant respectfully requests this case be returned to the Examiner for allowance or, alternatively, further examination.

The Commissioner is hereby authorized to charge any fees connected with this communication or credit any overpayment to Munck Butrus Deposit Account No. 50-0208.

Respectfully submitted,

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